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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/401,490	09/22/1999	SATOSHI WATANABE	KOJIM-289	4743

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MILLEN, WHITE, ZELANO & BRANIGAN, P.C.
2200 CLARENDON BLVD.
SUITE 1400
ARLINGTON, VA 22201

EXAMINER

TRAN, BINH X

ART UNIT	PAPER NUMBER
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1765

DATE MAILED: 03/16/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/401,490

Applicant(s)

WATANABE ET AL.

Examiner

Binh X Tran

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 August 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3,4,6 and 8-20 is/are pending in the application.
- 4a) Of the above claim(s) 4,8 and 9 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3,6 and 10-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☒ Claim(s) 1,3,4,6 and 8-20 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Double Patenting

1. Applicant is advised that should claim 11 be found allowable, claim 20 will be objected to under 37 CFR 1.75 as being a substantial duplicate thereof. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

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4. Claims 1, 3, 6, 12-16, and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kobayashi in view of Seimi Chemical Co., Ltd Product.

Respect to claim 1, Kobayashi discloses a resist composition comprising:
a base polymer (col. 5 lines 40-67, col. 7 lines 37-41, col. 11 lines 53-55).
a fluorochemical surfactant (such as SURFON™ trademark of Asahi Glass) (See col. 21 line 52 to col. 22 line 10).

Kobayashi discloses the use of using SURFLON™ in his composition. However, Kobayashi fails to disclose the specific kind of SURFLON™ surfactant. Seimi Chemical Co., Ltd Product discloses a various kind of SURFLON™ surfactant make by Asahi Glass and Seimi Chemical Co., Ltd including KH-40™ surfactant. It would have been obvious to one having ordinary skill in the art, at the time of invention, to modify Kobayashi in view of Seimi Chemical Co., Ltd. Product by using various kind of KH surfactant including KH-40™ because provides many unmatched properties and performances not available with hydrocarbon surfactant is readily available. Further, this surfactant is readily available.

Seimi Chemical Co., Ltd. Product does not explicitly disclose the specific formula structure of KH-40™ surfactant. However, it is well know in the art as well as admitted by applicants in the specification (page 4) that the KH-40™ surfactant has the formula structure as shown in claim 1.

Respect to claim 3, Kobayashi discloses exposing the composition to x-rays (col. 30 lines 1-6).

Respect to claim 6, Kobayashi discloses a composition comprising:

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a base resin of an alkali-insoluble or alkali low-soluble resin (i.e., scaly soluble resin) having acidic functional groups protected with acid-decomposable groups (read on "acid-labile groups") wherein the resin become alkali soluble when the acid-decomposable groups are eliminated; (col. 3 lines 24-52, col. 4);

a photo-acid generator capable of generating acid upon exposure to deep UV, X-rays or electron beam (col. 12 lines 49-65, col. 30 lines 2-6);

a fluorochemical surfactant (such as SURFLON™, See col. 21 line 52 to col. 22 line 10).

The limitation regarding the specific formula structure as disclosed in claim 6 has been discussed above. It is well known in the art as well as admitted by applicants in the specification (page 4) that the KH-40™ surfactant has the formula structure of claims 12-16. Respect to claim 19, Kobayashi discloses the base polymer is polyhydroxystyrene (col. 11 lines 53-55). Seimi Chemical Co., Ltd. *Product* does not explicitly disclose the specific formula structure of its KH-40™ surfactant.

5. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kobayashi in view of Nishi et al. (US 5,695,906).

Respect to claim 10, Kobayashi discloses the composition has novolak resin (col. 11 lines 52-53) and fluorochemical surfactant (discuss above). Kobayashi fails to disclose a naphthoquinonediazide compound. In a photoresist composition, Nishi et al. discloses a composition having naphthoquinonediazide compound (col. 7 lines 5-30) as well as novolak resin. It would have been obvious to one having ordinary skill in the art, at the time of invention, to modify Kobayashi in view of Nishi by using a

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naphtoquinonediazide because it is capable of reacting with other compound in the present of basic catalyst at room temperature.

6. Claims 11, 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kobayashi and Nishi in view of Seimi Chemical Co., Ltd Product.

Kobayashi discloses the use of using SURFLON™ surfactant in his composition. However, Kobayashi fails to disclose the specific kind of SURFLON™ surfactant. Seimi Chemical Co., Ltd Product discloses a various kind of SURFLON™ surfactant make by Asahi Glass and Seimi Chemical Co., Ltd including KH-40™ surfactant. It would have been obvious to one having ordinary skill in the art, at the time of invention, to modify Kobayashi in view of Seimi Chemical Co., Ltd. by using various kind of KH surfactant including KH-40™ because it provide many unmatched properties and performances not available with hydrocarbon surfactant. Further, it is readily available.

Seimi Chemical Co., Ltd. *Product* does not explicitly disclose the specific formula structure of its KH-40™ surfactant. However, it is well know in the art as well as admitted by applicants in the specification (page 4) that the KH-40™ surfactant (trademark) has the formula structure of claim 11 and/or claim 20.

7. Claims 17-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kobayashi et al. and Seimi Chemical Co., Ltd. *Product* in view of Schacht et al. (US 5,849,808)

Claims 17-18 differ from Kobayashi by the specific concentration of fluorochemical surfactant. In a photoresist composition, Schacht discloses the use of fluorochemical surfactant. Schacht further teaches the concentration of the surfactant is

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a result effective variable by varying it from 0.01 % to 0.1 % by weight (col. 11 lines. 20-32; Note 0.01 % = 100 parts by weight by million, within applicants' range). The result effective variable is commonly determined by routine experiment. The process of conducting routine experiments so as to produce an expected result is obvious to one of ordinary skill in the art. Hence, it would have been obvious to one having ordinary skill in the art, at the time of invention to modify Kobayashi and Seimi Chemical Co., Ltd in view of Schacht by perform routine experiment to obtain optimal concentration of fluorochemical surfactant concentration as an expected result

Response to Arguments

8. Applicant's arguments filed 8-25-2003 have been fully considered but they are not persuasive. The applicants argues that "there is no teaching or suggestion for one of ordinary skill in the art to add a KH-40™ nonionic surfactant out of the countless nonionic surfactant that could be added or modified (emphasis added). The examiner disagrees. Kobayashi not only discloses countless of nonionic surfactant, but he also specifically discloses to use the SURFLON™ nonionic surfactant (col. 22 lines 1-4). There is a finite number of SURFLON™ nonionic surfactant. Further, Asahi Glass Co. and Seimi Chemical Co. specifically teach that the SURFLON™ surfactant "provide many unmatched properties and performances not available with hydrocarbon surfactants". KH-40™ is a SURFLON™ surfactant has some advantage over other surfactant.

The applicants further argue that the Product Literature of Asahi Glass and Seimi Chemical Company discloses the nonionic surfactant KH-40™ as well as other nonionic

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surfactant such as S381™. Applicants argue that the prior arts fail to provide any motivation for one skill in the art to select and use the surfactant of the present invention (i.e. KH-40™ surfactant). The examiner disagrees. The examiner acknowledges that the Product Literature discloses both KH-40™ and S381™ surfactant. However, the Product Literature also discloses the chemical properties of each surfactant. S381™ is 50% solid content has very low flash point (i.e. -5 °C). KH-40™ is a 100% solid, therefore, the flash point is non applicable. Any person having ordinary skill in the art would see that the S381™ is very flammable material due to the significant low flash point temperature. Since S381™ is very flammable, it would be much easier and safer to handle KH-40™ surfactant. Therefore, the examiner still maintains the that it would be obvious to modify Kobayashi in view of Seimi Chemical Co., Ltd Product.

The applicants further argue, "There is no evidence that Kobayashi discloses naphtoquinonediazide. The resist composition of Kobayashi is therefore, fundamentally distinct from the resist composition of Nishi such that one skilled in the art would not be motivated to combine the teachings of these reference". The examiner disagrees. The examiner acknowledges that Kobayashi does not disclose naphtoquinonediazide in his resist composition. However, Nishi clearly teaches the advantage of using naphtoquinonediazide in the resist composition because it is capable of reacting with other compound in the present of basic catalyst at room temperature. The examiner still maintains that it would be obvious to modify Kobayashi in view of Nishi.

The applicants further argue, "the combined teachings [combination of Kobayashi and Nishi] provide no direction to select SURFLON™ from the surfactant

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disclosed by Kobayashi". The examiner strongly disagrees with this argument.

Kobayashi explicitly teaches to use SURFLON™ surfactant in col. 22 lines 1-4.

Conclusion

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Binh X Tran whose telephone number is (571) 272-1469. The examiner can normally be reached on Monday-Thursday and every other Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nadine G Norton can be reached on (571) 272-1465. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Binh X. Tran

NADINE G. NORTON
PRIMARY EXAMINER

